

**U.S. FISH AND WILDLIFE SERVICE
SPECIES ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM**

SCIENTIFIC NAME: *Spermophilus tereticaudus chlorus*

COMMON NAME: Palm Springs round-tailed ground squirrel

LEAD REGION: Region 8

INFORMATION CURRENT AS OF: April 2006

STATUS/ACTION (Check all that apply):

☐ Species assessment - determined we do not have sufficient information on file to support a proposal to list the species and, therefore, it was not elevated to Candidate status

☐ New candidate

☒ Continuing candidate

☒ Non-petitioned

☐ Petitioned - Date petition received: ____

____ 90-day positive - FR date: ____

____ 12-month warranted but precluded - FR date: ____

☐ Did the petition request a reclassification of a listed species?

FOR PETITIONED CANDIDATE SPECIES:

a. Is listing warranted (if yes, see summary of threats below)? yes

b. To date, has publication of a proposal to list been precluded by other higher priority listing actions? yes

c. If the answer to a. and b. is "yes", provide an explanation of why the action is precluded. We find that the immediate issuance of a proposed rule and timely promulgation of a final rule for this species has been, for the preceding 12 months, and continues to be, precluded by higher priority listing actions. During the past 12 months, most of our national listing budget has been consumed by work on various listing actions to comply with court orders and court-approved settlement agreements, meeting statutory deadlines for petition findings or listing determinations, emergency listing evaluations and determinations and essential litigation-related, administrative, and program management tasks. We will continue to monitor the status of this species as new information becomes available. This review will determine if a change in status is warranted, including the need to make prompt use of emergency listing procedures. For information on listing actions taken over the past 12 months, see the discussion of "Progress on Revising the Lists," in the current CNOR which can be viewed on our Internet website (<http://endangered.fws.gov>). Additionally, the CFWO is currently funding a study to examine the taxonomic status of this subspecies among its close relatives with molecular techniques. A decision on whether to prepare a listing package for this subspecies will follow the results of this study.

☐ Listing priority change

Former LP: 6

New LP: 3

- ___ Candidate removal: Former LP: ___ (Check only one reason)
- ___ A – Taxon is more abundant or widespread than previously believed or not subject to the degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status.
 - ___ U – Taxon not subject to the degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status due, in part or totally, to conservation efforts that remove or reduce the threats to the species.
 - ___ F – Range is no longer a U.S. territory.
 - ___ I – Insufficient information exists on biological vulnerability and threats to support listing.
 - ___ M – Taxon mistakenly included in past notice of review.
 - ___ N – Taxon does not meet the Act’s definition of “species.”
 - ___ X – Taxon believed to be extinct.

ANIMAL/PLANT GROUP AND FAMILY: Mammalia, Family Sciuridae

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: California

CURRENT STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: California

LAND OWNERSHIP (Estimate proportion Federal/state/local government/private, identify non-private owners): The range of the Palm Springs round-tailed ground squirrel habitat is divided between Federal, Tribal, and private ownership. Approximately 6,224 ha (15,380 ac) is managed by the Bureau of Land Management, approximately 3,326 ha (8,220 ac) Tribal, and approximately 120,501 ha (297,763 ac) is on private lands.

LEAD REGION CONTACT: Diane Elam (CNO) 916-414-6464; Scott McCarthy (RO) 503-231-6131

LEAD FIELD OFFICE CONTACT: Carlsbad Fish and Wildlife Office, Andreas Chavez, 760-431-9440

BIOLOGICAL INFORMATION

Spencer F. Baird first described the round-tailed ground squirrel (*Spermophilus tereticaudus*) in an 1857 report for the Pacific Railroad (Baird 1857). In 1903, Elliot (1904) described the round-tailed ground squirrel in the Coachella Valley as a separate species (*Citellus chlorus*). Grinnell (1913) subsequently reduced *C. chlorus* to a subspecies of *C. tereticaudas* (as *C. t. chlorus*) and in 1918, Grinnell and Dixon used Palm Springs round-tailed ground squirrel as the common name to describe this subspecies. The genus, *Citellus*, was later replaced by *Spermophilus* (Hershkovitz 1949). Currently, there are four described subspecies of the round-tailed ground squirrel, including *Spermophilus tereticaudus apricus*, *S. t. chlorus*, *S. t. neglectus*, and *S. t. tereticaudus* (Hall 1981). The range for *S. t. chlorus* is described from records in Cabazon, Whitewater Station, Coachella, Mecca, and Agua Caliente in the Coachella Valley region. The distribution of its closest relative, the Yuma round-tailed ground squirrel (*S. t. tereticaudus*), has been described as surrounding that of *S. t. chlorus* to the south, east and as far north as Death Valley National Monument (Hall 1981).

There exist questions regarding the validity of *Spermophilus tereticaudus chlorus* as a subspecific taxon. The rodent specialist group belonging to the International Union for the Conservation of Nature and Natural Resources/Species Survival Commission recommended comparing populations of *S. t. chlorus* with *S. t. tereticaudus* populations to document the level of evolutionary differentiation and subspecific validity (Hafner 1998). Historically, the taxonomic status of *S. t. chlorus* was based on morphological characters (e.g., cranial and dental measurements; Hall 1981). In 2000, the U.S. Fish & Wildlife Service (Service) funded the San Diego Natural History Museum (SDNHM) to conduct a taxonomic review of *S. t. chlorus*. SDNHM's review compared 28 morphological characters from museum specimens collected from several desert localities in southeastern California, including the Coachella Valley, other localities in the Colorado River region of eastern Imperial and Riverside Counties, Death Valley, the Mojave Desert, Borrego Valley, and Mason Valley in San Diego County (Unitt and Tremor, SDNHM, unpublished data). Of these characters, the only character that statistically distinguished *S. t. chlorus* from *S. t. tereticaudus* was pelage color. The results of this review also demonstrated that *S. t. chlorus* may be more widespread than previously believed since pelage color from round-tailed ground squirrels in the central region of the Mojave Desert, Death Valley, and Borrego Valley was more similar to *S. t. chlorus* than *S. t. tereticaudus*. As a result, they suggested a range expansion for *S. t. chlorus* to include these other disjunct areas. Results from the SDNHM's phenetic (*i.e.*, morphological) analysis of *S. tereticaudus* provides useful phylogenetic hypotheses into the evolutionary relationships of different populations of round-tailed ground squirrels. The Service is currently working with the U.S. Geological Survey, Biological Resources Discipline (BRD) through the Science Support Partnership Program to further examine the taxonomy of round-tailed ground squirrels based on gene sequences and to understand which population shares their most recent common ancestors with each other. We are awaiting the results of this study to see if there is a need to revise the taxonomy of *S. t. chlorus* and reevaluate status of this taxon as a candidate species for listing. Until more information is provided, we still consider the Palm Springs round-tailed ground squirrel (*S. t. chlorus*) to be limited to round-tailed ground squirrel populations found within the Coachella Valley region.

Round-tailed ground squirrels are relatively small in comparison with other *Spermophilus* species. They have a small rounded head with small ears and large dark eyes (Ernest and Mares 1987). Round-tailed ground squirrels have even coloration and lack stripes. Color phases include plain drab gray, pinkish cinnamon, or pale cinnamon brown (Ingles 1965, Ernest and Mares 1987). Unlike most other ground squirrels, round-tailed ground squirrels have a relatively long tail which is round, but not bushy. The range of this species includes the Mojave and Sonoran deserts of the southwestern United States and northwestern Mexico. Like other ground squirrels, round-tailed ground squirrels are active only during the day. Round-tailed ground squirrels can both estivate and enter torpor when their energetic requirements cannot be met (Hudson 1964). They also spend the winters largely inactive and inside their burrows, but occasionally have been observed above ground on warm winter days (Hudson 1964; Drabek 1970). Round-tailed ground squirrels appear somewhat colonial because different individuals have been observed exiting the same burrow (Dunford 1977a). Colonies appear to be mostly composed of females and their female offspring (Dunford 1977b). In Arizona, observations were made of adult male round-tailed ground squirrels (*S. t. neglectus*) arriving at colonies in March to mate, new juveniles emerging above ground in May, and males dispersing around June

or July (Drabek 1970; Dunford 1977b).

Round-tailed ground squirrels generally inhabit sandy areas from 73 m below sea level to 1,190 m above sea level (Grinnell & Dixon 1918; Cockrum 1960; Ernest & Mares 1987). They are often found occupying low flat areas in various types of desert shrub communities (*e.g.*, mesquite, creosote, *Atriplex* spp) in sand dunes (Johnson *et al.* 1948; Bradley & Deacon 1971); fine sand accumulated along banks, roads, and among shrubs; and in areas with more coarse, hard-packed sand and gravel (Ernest and Mares 1987).

In the Coachella Valley, the Palm Springs round-tailed ground squirrel burrows were found by Grinnell & Dixon (1918) in sandy hummocks underneath mesquite, creosote, and creosote with palo-verde (*Cercidium* sp). In 2002, the Service's Carlsbad Fish and Wildlife Office conducted a quantitative survey to test hypotheses regarding the association between the Palm Springs round-tailed ground squirrel and different vegetation types. The Service surveyed 20% of the public lands in the Coachella Valley that were modeled as Palm Springs round-tailed ground squirrel habitat within the boundaries for the proposed Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP 2002). This area represented a majority of the sites in the Coachella Valley where the Palm Springs round-tailed ground squirrel are still known to exist (Ball *et al.* 2005). The results of this study demonstrated that the probability with which a survey point was occupied by the Palm Springs round-tailed ground squirrel depended on the vegetation and substrate type. The Palm Springs round-tailed ground squirrel was most likely to occupy honey mesquite (*Prosopis glandulosa* var. *torreyana*) on dunes and hummocks (estimated occupation probability \pm SE, 0.99 ± 0.01) than creosote on dunes and hummocks (0.33 ± 0.09) or other vegetation/substrate categories (≤ 0.08 ; Ball *et al.* 2005).

In general, round-tailed ground squirrels are omnivorous with diet shifts throughout the year. In the 1930s, Grinnell (1937) reported that the stomachs of round-tailed ground squirrels (*S. t. tereticaudus*) in Death Valley in April were full of mesquite leaves. Bradley & Deacon (1971) reported that the stomach contents of round-tailed ground squirrels in the vicinity of Death Valley National Park was 100% green vegetation in the summer with seeds and insects incorporated in varying amounts the rest of the year. Drabek (1970; 1973) reported that round-tailed ground squirrels in Arizona (*S. t. neglectus*) were observed eating blooming chinchweed (*Pectis papposa*), mesquite (*e.g.*, leaves, seeds, flowers, and bark), and creosote fruit. Grinnell & Dixon (1918) collected an individual Palm Springs round-tailed ground squirrel (*S. t. chlorus*) in the Coachella Valley with a mesquite flower in its mouth. Likewise, while trapping the Palm Springs round-tailed ground squirrel near their burrows in the Coachella Valley, Service personnel often found partially consumed leaves and seed pods of honey mesquite outside of the Palm Springs round-tailed ground squirrel's burrow entrances in mesquite communities (Service, unpublished data). In fact, the timing of the mesquite leaf-out appeared to coincide with the squirrel's active period in the Coachella Valley.

Although the Palm Springs round-tailed ground squirrel also occupies some areas vegetated primarily with creosote in the Coachella Valley, there is speculation that creosote-dominated habitat may not be optimal for the squirrel because creosote leaves and stems are coated with a phenolic resin that are known to be toxic to several other herbivores and can cause problems such as kidney lesions and an increased production of urine (Grice *et al.* 1968; Rhoades & Cates

1976; Mangione et al. 2000; Dearing et al. 2002). In Arizona, round-tailed ground squirrels (*S. t. neglectus*) are also found in creosote-dominated habitat, but they may be able to better tolerate living in this habitat because winter and summer monsoon rains in Arizona produce greater numbers of herbaceous annuals and insects that may supplement their diet (G. Walsberg, Arizona State University, Tempe, AZ, unpublished data). The Coachella Valley experiences lower precipitation and seemingly produces a lower amount of annuals and insects.

THREATS

A. The present or threatened destruction, modification, or curtailment of its habitat or range.

Rapid growth of desert cities such as Palm Springs and Palm Desert has raised concerns about the conservation of the Palm Springs round-tailed ground squirrel, which is restricted in range to the Coachella Valley region. Urban development and a lowering in the groundwater table have eliminated all but approximately 10% of honey mesquite in the Valley; the plant with which this squirrel is strongly associated with (Ball *et al.* 2005).

According to Ball *et al.* (1995), the primary habitat for the Palm Springs round-tailed ground squirrel in the Coachella Valley is the honey mesquite sand dune/hummock community. It is estimated that in 1939, honey mesquite hummocks occupied 3,363 ha (8,309 ac) of the Coachella Valley floor (Coachella Mountains Conservancy 2003). This has been reduced to 352 ha (870 ac) as of 1998, a decline of almost 90 percent. This threat is ongoing as urbanization continues to expand in the Coachella Valley. Of the suitable habitat remaining, a minimum of 50 percent is directly at risk from urban development currently provided for under Riverside County's General Plan (Riverside County Planning Department 1985a, 1985b), and the general plans of incorporated cities in this area (e.g., Desert Hot Springs, Palm Springs, Rancho Mirage, Palm Desert, Indio, Coachella). Based on information from the State of California Department of Finance, and the Southern California Association of Governments, the population in the Coachella Valley is projected to increase to 456,971 in 2020 (the population was 289,819 in 1997). Many projects are moving forward. For example, a 26 ha (80 ac) patch of mesquite, one of the largest remaining patches in the Coachella Valley occupied by the Palm Springs round-tailed ground squirrel was recently eliminated in August of 2004 for a development project that was approved by the City of Indio. Numerous smaller patches of honey mesquite are scattered throughout La Quinta and Indio and are also threatened by the rapidly expanding urban development. In addition, the Desert Dunes golf course in Desert Hot Springs is proposing several hundred houses in a natural area that would eliminate most or all of its remaining honey mesquite.

The honey mesquite sand dune/hummock community is also threatened by the decreasing water table in the Coachella Valley. Honey mesquite is phreatophytic, meaning that its roots are adapted to grow deep into the water table. Increasing water consumption associated with growing urbanization is lowering the water table below the level at which honey mesquite roots can reach (Avery in prep.). For example, the Mission Springs Water District (MSWD) withdrew 1,400 acre-feet from the Mission Springs ground supply in 1978, 4,834 acre-feet in 1988, and 7,096 acre-feet in 1998 (MSWD 2000) in response to population growth in a portion of the Upper Coachella Valley. Simultaneously, the groundwater level in the Subbasin (near the Banning Fault) has dropped from 232 meters (760 feet) above sea level in 1955 to 218 meters (715 feet) above sea level in 1998 and is projected to drop to 212 meters (695 feet) above sea

level by 2005, a total drop of 20 meters (66 feet) over a 50-year period (MSWD 2000). This water level drop is only expected to accelerate in the future as demands are increasing with growing urbanization (MSWD 2000). The lack of available groundwater in the Coachella Valley is evident by decadent and declining honey mesquite in several areas (Coachella Valley Association of Governments 2003). This not only eliminates a valuable food source for the squirrel, but honey mesquite communities also provide cover and shelter by trapping aeolian sand that form dunes occupied by the Palm Springs round-tailed ground squirrel. Groundwater levels are an important component of the health of the Palm Springs round-tailed ground squirrel habitat in the Coachella Valley and need to be maintained or restored.

B. Overutilization for commercial, recreational, scientific, or educational purposes.

Not known to be a factor at this time.

C. Disease or predation.

Not known to be a factor at this time.

D. The inadequacy of existing regulatory mechanisms.

No formal protection is currently available to this species in the majority of its range. The State of California lists the Palm Springs round-tailed ground squirrel (*Spermophilus tereticaudus chlorus*) as a Species of Special Concern and asks lead agencies to consider impacts to species under this status during their California Environmental Quality Act (CEQA) process.

Some of the threats to the Palm Springs round-tailed ground squirrel, including loss of habitat, maintenance of geological processes that maintain suitable habitat, and habitat fragmentation, are currently being addressed in the pending Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP). The Coachella Valley MSHCP has been in development from the mid-1990s to present. Since 1997, the planning process has proceeded under a Memorandum of Understanding between the Coachella Valley Association of Governments (CVAG), several cities in the Coachella Valley, and local, state, and federal agencies. The MSHCP is proposing to provide about 725,000 acres of Conservation Areas that would benefit 27 federally and state listed and sensitive species, including the Palm Springs round-tailed ground squirrel, over the life of the permit (75 years). CVAG states that the proposed Conservation Areas in the MSHCP would protect core habitat areas from Cabazon to Windy Point, including Snow Creek, the Willow Hole area, and occupied habitat that meet their Core Habitat standard that provides significant habitat in the Whitewater Floodplain Reserve. They also propose to secure the long-term sand transport-delivery system that maintains the sandy habitat in the core habitat areas, including the sand-transport systems for the Snow Creek area, Whitewater floodplain, Willow Hole, and Coachella Valley Preserve. The plan's funding program proposes funding from a variety of potential sources, including, but not limited to: (1) local development mitigation fees; (2) fees on the importation of waste into landfills and transfer stations in Riverside County; (3) transportation project mitigation; and (4) regional infrastructure project mitigation.

The approval of this plan may be instrumental for future determinations of whether adequate

regulatory mechanisms exist to protect the Palm Springs round-tailed ground squirrel. Though CVAG's Executive Committee voted to approve the proposed Plan in February 2006, actual Plan adoption depends on approval by all twenty jurisdictions that would be permittees under the Plan. At present, three cities have established that they do not support the Plan as proposed, and are demanding changes that would reduce levels of protection for the ground squirrel. Without the support of these cities, the proposed Plan would have to be reformulated and recirculated for public comment, a process that could take several years. Other problems involve proposed funding levels for the Plan, which are not adequate to address the adverse effects of groundwater overdraft withdrawals that are killing honey mesquite stands that depend on ground water for survival. The honey mesquite hummock plant community has been virtually eliminated from the Coachella Valley but supports the highest densities and largest remaining populations of the Palm Springs round-tailed ground squirrel. Without additional funding or other commitments to either protect the remaining honey mesquite hummocks or conserve sufficient groundwater, the current or future revised versions of the Plan may not adequately protect the survival of the Palm Springs round-tailed ground squirrel.

In December 2002, the Bureau of Land Management (BLM) signed the Record of Decision approving the California Desert Conservation Area (CDCA) Plan Amendment for the Coachella Valley (Coachella Valley Plan). At issue were the effects of the CDCA Plan and ongoing activities on BLM lands on several special status species in the Coachella Valley, including the Palm Springs round-tailed ground squirrel. To more effectively and consistently manage their portion of the public lands within the CDCA, the BLM developed a land zoning system within the Coachella Valley Plan that provided specific land management prescriptions. Under this zoning strategy, different areas are assigned to one of four multiple-use classes (MUC). The MUC assignment is based on the considered sensitivity of resources and kinds of uses occurring in each geographic area. In addition, the BLM has committed to managing approximately 95% of their public land base consistent with the pending Coachella Valley MSHCP. Future activities on public lands within the conservation area boundary of the pending Coachella Valley MSHCP must achieve habitat conservation objectives either through avoidance or application of appropriate mitigation measures to be in conformance with the Coachella Valley Plan and consistent with the CVAG-proposed MSHCP. Overall, the Coachella Valley Plan provides general guidance that can either benefit or adversely affect the conservation of special status species, depending on location and project type relative to their Multiple-Use Class activity guidelines. Future activities and projects that may impact special status species, including the Palm Springs round-tailed ground squirrel, will still need site-specific environmental review under the auspices of the Coachella Valley Plan. Overall, because BLM's Coachella Valley Plan is structured in large part to tier-off/rely upon CVAG's proposed Plan, the current impasse on CVAG's Plan may undermine the effectiveness of BLM's conservation program for the Palm Springs round-tailed ground squirrel.

There are possible indirect effects to the Palm Springs round-tailed ground squirrel due to possible direct effects on their preferred habitat (honey mesquite sand dune/hummock community) from the Coachella Valley Water Management Plan. In October 2002, the Coachella Valley Water District's (CVWD) board of directors approved the Coachella Valley Water Management Plan and its preferred alternative (Alternative 4). Alternative 4 calls for the elimination of groundwater overdraft throughout the Coachella Valley basin by importing and

recharging water from the Colorado River, eliminating the decrease in groundwater levels in the upper portion of the Coachella Valley (Upper Valley), increasing groundwater levels in the lower portion of the Coachella Valley (Lower Valley), and promoting water conservation. Mesquite hummocks are found in two distinct places in regards to groundwater: 1) on or near active seismic faults; and 2) scattered among sand dunes on the valley floor. Alternative 4 may have a beneficial affect on the mesquite in the Lower Valley floor due to potential increases in groundwater in this area, however, very little mesquite remains in this portion of the valley, and most of it is not included in CVAGs proposed reserve system under the pending Coachella Valley MSHCP. In addition, honey mesquite communities near active faults are not addressed in the adopted Water Management Plan and are threatened by proposed groundwater pumping for the rapidly growing City of Desert Hot Springs (Noss *et al.* 2001).

Based on recent field work by the Service, the valley-wide population of the Palm Springs round-tailed ground squirrel has declined to probably fewer than 1,000 animals within CVAG's proposed reserve system (Service, unpublished data). Given the current problems with funding/management capabilities and approval of the proposed Plan, and the ongoing declines in groundwater elevation, the remaining Palm Springs round-tailed ground squirrel populations in the Coachella Valley face an uncertain future.

E. Other natural or manmade factors affecting its continued existence.

Habitat for the Palm Springs round-tailed ground squirrel has been severely reduced and fragmented by agricultural and urban development and related activities in the Coachella Valley. Habitat loss and fragmentation produce small and isolated populations, which experience higher probabilities of extirpation due to increased vulnerability to demographic and environmental stochastic (natural randomly occurring) events (Hanski 1994) and/or reduced fitness from genetic drift and inbreeding depression (Caughley 1994, Lacy 1997). Furthermore, isolation compounds the risk produced from small population size because it reduces the chance that populations will naturally recover through immigration of dispersing individuals from nearby populations. Urbanization is an isolating factor for the Palm Springs round-tailed ground squirrel because its predominant features, such as vast expanses of pavement and structures, remove suitable habitat and greatly prohibits Palm Springs round-tailed ground squirrel movements between areas of suitable habitat.

CONSERVATION MEASURES PLANNED OR IMPLEMENTED

Section 7 consultations and HCP's addressing other species have been completed at the behest of private land owners, mining interest, and the County of Riverside. These activities have not demonstrably resulted in conservation of the Palm Springs round-tailed ground squirrel.

Riverside County, the cities of the Coachella Valley, the U.S. Army Corps of Engineers, Bureau of Land Management, and Bureau of Indian Affairs, and the Agua Caliente Indian Reservation are aware of Service concerns regarding the Palm Springs round-tailed ground squirrel.

SUMMARY OF THREATS

Rapid growth of desert cities such as Palm Springs and Palm Desert in the Coachella Valley has raised concerns about the conservation of the narrowly distributed Palm Springs round-tailed

ground squirrel. Urban development and drops in the groundwater table have eliminated 90% of the honey mesquite in the Valley; the plant with which this squirrel is strongly associated. Furthermore, urban development has fragmented habitat occupied by this squirrel and is isolating populations. However, recent uncertainty about this subspecies' taxonomic description and distribution has raised questions regarding the impacts of these threats to this purported taxon.

LISTING PRIORITY

THREAT			
<u>Magnitude</u>	<u>Immediacy</u>	<u>Taxonomy</u>	<u>Priority</u>
High	Imminent	Monotypic genus	1
		Species	2
		Subspecies/population	3*
	Non-imminent	Monotypic genus	4
		Species	5
		Subspecies/population	6
Moderate to Low	Imminent	Monotypic genus	7
		Species	8
		Subspecies/population	9
	Non-imminent	Monotypic genus	10
		Species	11
		Subspecies/population	12

Rationale for listing priority number:
Magnitude:

The Palm Springs round-tailed ground squirrel has a listing priority of 3 because it is a subspecies of the round-tailed ground squirrel that has lost approximately 90 percent of its preferred habitat, honey mesquite sand dune/hummocks, and continues to experience high levels of threat from further habitat loss from a high rate of urban development and lowering of the groundwater table. This degree of habitat loss combined with the high rate of development of suitable habitat in the Coachella Valley warrant a high threat magnitude rating.

Immediacy:

A new study has demonstrated a strong relationship between the Palm Springs round-tailed ground squirrel and honey mesquite sand dune/hummock communities. We have determined the subspecies threat immediacy is imminent due to significant historic and ongoing losses of mesquite habitat from urbanization. In addition, the expected drop in the groundwater table in the Coachella Valley places the remaining honey mesquite communities at a greater risk.

Have you promptly reviewed all of the information received regarding the species for the purpose of determining whether emergency listing is needed? yes

Is Emergency listing warranted? No. There are no known activities that are expected to occur in the near future that would put the species in jeopardy of extinction. There are some populations that occur on reserves, and should be protected in perpetuity.

DESCRIPTION OF MONITORING

The Center for Conservation Biology (CCB) at the University of California, Riverside initiated a multi-year collaboration with CVAG in 2002 to design and develop a monitoring plan framework for the Coachella Valley MSHCP. Between 2003 and 2005, CCB surveyed the Palm Springs round-tailed ground squirrel on plots distributed on conservation lands throughout the remaining aeolian sand community in the Coachella Valley (CCB 2005). The CCB monitoring study was designed to answer several questions, including 1) which sampling protocol provides reliable, repeatable indication of the squirrel's range, occupancy, and relative abundance, 2) what are the squirrel's habitat affinities, and 3) do habitat edges impact the squirrels distribution and abundance? CCB found evidence suggesting that track detection provided the highest detection rates over sighting counts and vocalization counts. They did not test the mark-recapture methodology because of time and resource constraints. They also found evidence suggesting that squirrels were clearly found at their highest densities in mesquite dunes rather than active sand dunes, sand hummocks, and ephemeral sand fields. Even though the squirrels were 2-10 times more abundant in the mesquite, CCB emphasized the importance of not overlooking the other habitat types since the squirrel total population size outside the mesquite dunes is at least twice the size of the population inside the mesquite dunes, thus reflecting the low amount of area that mesquite occupies in the Coachella Valley. Finally, they did not find any evidence of a boundary effect on the squirrel population in the Thousand Palms Preserve.

COORDINATION WITH STATES

No information has been provided by the State of California on this species or its status.

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Comments: